

REMARKS

Claims 66-87 are pending in this application, all of which stand rejected as being obvious over U.S. Patent No. 6,490,474 to Willis (“Willis”). Applicants respectfully traverse this rejection, since Willis does not disclose or suggest the combination of elements required by these claims.

All of the independent claims (claims 66, 73, 74, 77, 84, and 85) have been amended to require that the designator be a binary map designator that identifies and marks an electrode. That is, the existence of the designator indicates that the electrode falls within a specific category (e.g., the electrode has a specific function, the electrode is adjacent a specific type of electrical activity, the electrode corresponds to coordinates specified by the user, etc.), and the absence of the designator indicates that the electrode does not fall within the specific category. Support for this amendment can be found in page 42, line 34 to page 44, line 35 of the specification, which describes various binary map designators. It can be appreciated that the use of binary map indicators allows the user to more easily navigate relative to the electrodes of a catheter by providing the user with a readily discernible reference.

With respect to independent claims 66 and 77, the Examiner had indicated that it would have been obvious to indicate whether an electrode is adjacent abnormal tissue based on Willis’ disclosure of “indicating whether the mapped location of the electrode is adjacent an arrhythmogenic site. Although Applicants agree that a designator that indicates whether an electrode is adjacent an arrhythmogenic site is an example of a binary map designator, Applicants respectfully disagree that independent claims 66 and 77 are obvious over Willis.

In particular, Willis teaches the display of data indicating the probability that there is an arrhythmogenic site at a mapped location. This data is not a binary map designator. That is, it does

not directly indicate whether or not the site is, in fact, arrhythmogenic. At most, Willis suggests that data indicating the probability of an adjacent arrhythmogenic site can be associated with an electrode. Willis does not suggest that the electrodes of Willis can be identified or marked with a binary map designator.

The Examiner states that it would have been obvious to display a designator indicating whether an electrode is adjacent abnormal tissue in order provide an efficient means for obtaining subsequent meaningful pacing measurement. Notwithstanding that it may be desirable to do this, a modification of the Willis system to identify the electrodes for this purpose is not suggested in Willis. That is, a system that displays data indicating the probability of an arrhythmogenic site at a mapped location does not suggest to one of ordinary skill in the art that an electrode can be marked and identified with a designator as being adjacent an actual arrhythmogenic site. Applicants submit that such a suggestion would only come from the disclosure of the instant application, which cannot be properly used as a basis for rendering the claims obvious.

With respect to independent claims 73, 74, 84, and 85, the Examiner had indicated that it would have been obvious to annotate the mapping or ablation electrodes to provide improved guidance and redundancy during a diagnostic and/or therapeutic procedure. Although, as the Examiner indicated, Willis does disclose that the extrapolated tip of a catheter can be displayed, the display of a catheter tip, by itself, is not a binary map designator, as required by the amended claims. Thus, the most that this teaching suggests is that it would be desirable to likewise display the electrodes of the catheter.

Independent claims 73 and 84 further require that the image be annotated with the binary map designator in response to the entry of a coordinate of the electrode. Although it is true that

Willis teaches determining the locations of electrodes, Applicants find nothing in Willis that discloses or suggests the display of a designator in response to the user entry of a coordinate. Applicants refer to page 8 of the Amendment and Response, dated September 15, 2003, which explains the significance of this feature.

Independent claims 74 and 85 further require that the designator identify and mark an electrode as having a specific function, e.g., pacing or recording. Again, Applicants find nowhere in Willis that discloses or suggests the display of a designator that identifies and marks an electrode as having a specific function.

Dependent claims 68-71 and 79-82 further associate the designator with early depolarization of the heart tissue, fractionated or broken electrogram, high pace mapping matching index, or arrhythmia entrainment. The Examiner indicated that Willis discloses that other mapping data may be displayed. This may be true, but the open-ended statement that other mapping data can be displayed is not tantamount to a disclosure or suggestion that designators identifying these specific events can be displayed.

Thus, Applicants submit that independent claims 66, 73, 74, 77, 84, and 85, as well as the claims depending therefrom (claims 67-72, 75, 76, and 78-83, 86, and 87), are not obvious in view of Willis, and as such, respectfully request withdrawal of the §103 rejections of these claims.

Conclusion

Based on the foregoing, it is believed that, with entry of this amendment, all claims are now allowable and a Notice of Allowance is respectfully requested. If the Examiner has any questions or

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comments regarding this amendment, the Examiner is respectfully requested to contact the undersigned at (714) 830-0600.

Respectfully submitted,

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